



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2014-0363; Directorate Identifier 2014-NE-08-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Rolls-Royce plc Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Supplemental notice of proposed rulemaking (NPRM); reopening of comment period.

**SUMMARY:** We are revising an earlier proposed airworthiness directive (AD) for all Rolls-Royce plc (RR) RB211 Trent 768-60, 772-60, and 772B-60 turbofan engines. The NPRM proposed to require inspection of the fan case low-pressure (LP) fuel tubes and clips and the fuel oil heat exchanger (FOHE) mounts and hardware. The NPRM was prompted by fuel leaks caused by damage to the fan case LP fuel tube. This supplemental action revises the NPRM by expanding inspections and corrective actions, correcting a part number (P/N) and the costs of compliance, reducing the applicability, providing another method to comply with certain requirements, and giving credit for certain previous actions. We are proposing this SNPRM to prevent failure of the fan case LP fuel tube, which could lead to an in-flight engine shutdown, loss of thrust control, and damage to the airplane.

**DATES:** We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.
- Mail: Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue SE, West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- Fax: 202-493-2251.

For service information identified in this SNPRM, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE24 8BJ; phone: 011-44-1332-242424; fax: 011-44-1332-249936; email: [http://www.rolls-royce.com/contact/civil\\_team.jsp](http://www.rolls-royce.com/contact/civil_team.jsp); Internet: <https://www.aeromanager.com>. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0363; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the mandatory continuing

airworthiness information (MCAI), the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Wego Wang, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7134; fax: 781-238-7199; email: [wego.wang@faa.gov](mailto:wego.wang@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this SNPRM. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2014-0363; Directorate Identifier 2014-NE-08-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this SNPRM. We will consider all comments received by the closing date and may amend this SNPRM based on those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this SNPRM.

### **Discussion**

We issued an NPRM to amend 14 CFR part 39 by adding an AD that would apply to the specified products. The NPRM was published in the *Federal Register* on July 3,

2014 (79 FR 37965). The NPRM proposed to require inspection of the fan case LP fuel tubes and clips and the FOHE mounts and hardware.

#### **Related Service Information under 1 CFR Part 51**

We reviewed RR Alert Non-Modification Service Bulletin (NMSB) No. RB.211-73-AH522, Revision 2, dated July 18, 2014; RR NMSB No. RB.211-73-AH837, initial issue, dated September 9, 2014; and RR NMSB No. RB.211-73-G848, Revision 3, dated June 12, 2014. This service information describes procedures for inspecting, and replacing if required, the fan case LP fuel tube and clips, and the FOHE mounts and hardware. This service information is reasonably available because the interested parties have access to it through their normal course of business or see ADDRESSES for other ways to access this service information.

#### **Actions Since Previous NPRM was Issued**

Since we issued the NPRM (79 FR 37965, July 3, 2014), RR received reports of additional failures of clips associated with the LP fuel tube occurring prior to the next inspection as required by the NPRM. RR published NMSB No. RB.211-73-AH837, initial issue, dated September 9, 2014, to provide instructions for additional specific visual inspections, at shorter intervals, of the upper clip attaching feature and the bracket holding this clip to the oil tank and, based on inspection results, instructions for corrective actions. The European Aviation Safety Agency (EASA) also issued EASA AD 2014-0243, dated November 6, 2014, and EASA AD 2014-0243R1, dated December 10, 2014, which mandate additional inspections and corrective actions, grant credit for certain prior inspections, allow a certain in-shop inspection to serve in lieu of a required visual inspection, and state that replacing parts as a result of the inspections required by

those EASA ADs, and as described in paragraphs (e)(1), (e)(2), and (e)(3) of this AD, are not terminating action. We reviewed EASA's changes and concluded that they are necessary to correct the unsafe condition this SNPRM addresses. We incorporate EASA's changes into paragraphs (e)(1) and (e)(4) of this SNPRM.

In addition to these changes, we made other changes.

Since we issued the NPRM (79 FR 37965, July 3, 2014), we found that we referenced a non-existent fan case LP fuel tube P/N in the NPRM. Specifically, fan case LP fuel tube, P/N FW535776, does not exist. We changed paragraph (e)(3) of this SNPRM to eliminate the non-existent part number, replacing it with the correct one for the fan case LP fuel tube, P/N FW53576.

We also found that we did not include in our cost estimate an estimate of the number of engines that we expect will fail the proposed inspections. We revised our cost estimate in this SNPRM by adding an estimate of the number of engines that we expect will fail inspection, and the cost of replacement parts.

We also found that we did not provide adequate information to identify the applicable engines affected by this AD. We changed the Applicability paragraph to specify that certain engine models outfitted with fan case LP fuel tube, P/N FW53576, when installed by incorporating either RR production modification 73-F343, or RR Service Bulletin (SB) No. RB.211-73-F343, Revision 4, dated May 26, 2011, are affected by this SNPRM.

## **Comments**

We gave the public the opportunity to participate in developing this proposed AD. We received no comments on the NPRM (79 FR 37965, July 3, 2014).

### **FAA's Determination**

We are proposing this SNPRM because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design. Certain changes described above expand the scope of the NPRM (79 FR 37965, July 3, 2014). As a result, we have determined that it is necessary to reopen the comment period to provide additional opportunity for the public to comment on this SNPRM.

### **Proposed Requirements of this SNPRM**

This SNPRM would require accomplishing the actions specified in the NPRM, except as discussed in the Actions Since Previous NPRM was Issued paragraph.

### **Costs of Compliance**

We estimate that this proposed AD affects about 50 engines installed on airplanes of U.S. registry. We also estimate that it would take about 6 hours per engine to comply with this proposed AD. The average labor rate is \$85 per hour. We also estimate that 25 of the engines will fail the inspection proposed by this AD. Required parts cost about \$4,031 per engine. Based on these figures, we estimate the cost of this proposed AD on U.S. operators to be \$126,275.

### **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in “Subtitle VII, Part A, Subpart III, Section 44701: General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**Rolls-Royce plc:** Docket No. FAA-2014-0363; Directorate Identifier 2014-NE-08-AD.

#### **(a) Comments Due Date**

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to all Rolls-Royce plc (RR) RB211 Trent 768-60, 772-60, and 772B-60 turbofan engines, if fitted with fuel tube, part number (P/N) FW53576, which was incorporated through RR production modification 73-F343 or which were modified in service in accordance with RR Service Bulletin (SB) No. RB.211-73-F343, Revision 4, dated May 26, 2011, or earlier versions.



**(d) Reason**

This AD was prompted by fuel leaks caused by damage to the fan case low-pressure (LP) fuel tube. We are issuing this AD to prevent failure of the fan case LP fuel tube, which could lead to an in-flight engine shutdown, loss of thrust control, and damage to the airplane.

**(e) Actions and Compliance**

Comply with this AD within the compliance times specified, unless already done.

(1) Within 800 flight hours (FH) after the effective date of this AD, and thereafter at intervals not to exceed 800 FH, inspect the clip at the uppermost fan case LP fuel tube clip position, CP4881, and support bracket, P/N FW26692. Use Accomplishment Instructions, paragraph 3.A, of RR Non-Modification Service Bulletin (NMSB) No. RB.211-73-AH837, initial issue, dated September 9, 2014, or paragraph 3.A. or 3.B. of RR NMSB No. RB.211-73-AH522, Revision 2, dated July 18, 2014, or earlier versions, to do your inspection.

(i) If the clip at the uppermost clip position, CP4881, fails inspection, replace the clip with a part eligible for installation and, before further flight, inspect the fan case LP fuel tube, P/N FW53576, for fretting, and clips for cracks or failure, according to Accomplishment Instructions, paragraph 3.A. of RR NMSB No. RB.211-73-AH837, initial issue, dated September 9, 2014, or paragraph 3.A. or 3.B. of RR NMSB No. RB.211-73-AH522, Revision 2, dated July 18, 2014, or earlier versions.

(ii) If the support bracket, P/N FW26692, fails inspection, replace the bracket before further flight with a part eligible for installation and inspect the fan case LP fuel tube, P/N FW53576, and clips for cracks or failure.

(2) Within 4,000 FH since new or 800 FH, whichever occurs later, after the effective date of this AD, and thereafter at intervals not to exceed 4,000 FH, inspect the fan case LP fuel tube, P/N FW53576, and clips, and the fuel oil heat exchanger (FOHE) mounts and hardware, for damage, wear, or fretting. Use paragraph 3.A. or 3.B., Accomplishment Instructions, of RR Alert NMSB No. RB.211-73-AH522, Revision 2, dated July 18, 2014, or earlier versions, to do the inspection.

(i) If the fan case LP fuel tube, P/N FW53576, fails inspection, before further flight, replace the fuel tube and clips with parts eligible for installation.

(ii) If any FOHE mount or hardware shows signs of damage, wear, or fretting, replace the damaged part before further flight with a part eligible for installation.

(3) At each shop visit after the effective date of this AD, inspect the fan case LP fuel tubes, P/Ns FW26589, FW36335, FW26587, FW53577, and FW53576, and clips, and the FOHE mounts and hardware, for damage, wear, or fretting. Use paragraphs 3.B.(1) and 3.B.(2) of RR Alert NMSB No. RB.211-73-AH522, Revision 2, dated July 18, 2014, or earlier versions, to do the inspection.

(i) If any fan case LP fuel tube fails inspection, replace the fuel tube and clips before further flight with parts eligible for installation.

(ii) If any FOHE mount or hardware shows signs of damage, wear, or fretting, replace the damaged part before further flight with a part eligible for installation.

(4) If you replace any fan case LP fuel tube, clip, or FOHE mount or hardware as a result of the inspections of paragraphs (e)(1), (e)(2), or (e)(3) of this AD, you must still continue to perform the repetitive inspections of paragraphs (e)(1), (e)(2), and (e)(3) of this AD.

(5) Any reports requested in the NMSB accomplishment instructions referenced in paragraphs (e)(1), (e)(2), and (e)(3) of this AD are not required by this AD.

**(f) Credit for Previous Actions**

If, before the effective date of this AD, you performed the inspections and corrective actions required by paragraph (e)(2) of this AD using RR NMSB No. RB.211-73-G848, Revision 3, dated June 12, 2014, or earlier versions, you met the initial inspection requirements of paragraph (e)(2) of this AD.

**(g) Definitions**

For the purposes of this AD:

(1) An “engine shop visit” is the induction of an engine into the shop for maintenance involving the separation of pairs of major mating engine flanges, except that the separation of engine flanges solely for the purposes of transportation without subsequent engine maintenance is not an engine shop visit.

(2) The fan case LP fuel tubes and clips, and the FOHE mounts and hardware, are eligible for installation if they have passed the inspection requirements of paragraphs (e)(1), (e)(2), and (e)(3) of this AD.

**(h) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, FAA, may approve AMOCs to this AD. Use the procedures found in 14 CFR 39.19 to make your request. You may email your request to: ANE-AD-AMOC@faa.gov.

**(i) Related Information**

(1) For more information about this AD, contact Wego Wang, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New

England Executive Park, Burlington, MA 01803; phone: 781-238-7134; fax: 781-238-7199; email: [wego.wang@faa.gov](mailto:wego.wang@faa.gov).

(2) Refer to MCAI European Aviation Safety Agency AD 2014-0243R1, dated December 10, 2014 for more information. You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov/#!docketDetail;D=FAA-2014-0363>.

(3) RR Alert NMSB No. RB.211-73-AH522, Revision 2, dated July 18, 2014, and earlier versions; RR NMSB No. RB.211-73-AH837, initial issue, dated September 9, 2014; and RR NMSB No. RB.211-73-G848, Revision 3, dated June 12, 2014, and earlier versions; which are not incorporated by reference in this AD, can be obtained from Rolls-Royce plc, using the contact information in paragraph (i)(4) of this proposed AD.

(4) For service information identified in this proposed AD, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE24 8BJ; phone: 011-44-1332-242424; fax: 011-44-1332-249936; email: [http://www.rolls-royce.com/contact/civil\\_team.jsp](http://www.rolls-royce.com/contact/civil_team.jsp); Internet: <https://www.aeromanager.com>.

(5) You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on April 7, 2015.

Ann C. Mollica,  
Acting Directorate Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

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